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Filed by: Trial Section Merits Panel  
Box Interference  
Washington, D.C. 20231  
Tel: 703-308-9797  
Fax: 703-305-0942

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

YULUN WANG, KEITH P. LABY, DARRIN R. UECKER,  
AMANTE A. MANGASER, and MODJTABA GHODOUSSI

Junior Party,  
(Patent 5,878,193),

v.

PHILIP S. GREEN

Senior Party  
(Application 08/709,930).

MAILED

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PAT. & T.M. OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

Patent Interference No. 104,644

Before SCHAFER, LEE, and MEDLEY, Administrative Patent Judges.

MEDLEY, Administrative Patent Judge.

DECISION ON PRELIMINARY MOTIONS AND JUDGMENT

**A. Introduction**

This interference was declared on December 8, 2000. Wang has filed a preliminary motion 1 under Rule 633(a) for judgment against Green's sole involved claim 115 on the ground that the

claim is unpatentable under 35 U.S.C. § 135(b) (Paper 37). Wang has filed a preliminary motion 2 under 37 CFR § 1.633(a) for judgment against Green on the ground that Green claim 115 is unpatentable under 35 U.S.C. § 112, ¶ 1 (Paper 39).

Green preliminary motion 2<sup>1</sup>, filed under 37 CFR § 1.633(a), seeks judgment against Wang on the ground that Wang's involved claims 1-3 are unpatentable under 35 U.S.C. §§ 102/103 based on various pieces of prior art (Paper 33). Oral argument was held on 10 October 2001.

For the reasons that follow, Wang preliminary motions 1 and 2 are denied. Green preliminary motion 2 is granted.

**B. Findings of fact**

1. Wang is involved on the basis of Patent 5,878,193 ('193), granted 2 March 1999, based on application 08/732,015, filed 16 October 1996.

2. Wang has been accorded benefit for the purpose of priority of application 08/481,926, filed 6 June 1995, application 08/167,704, filed 15 December 1993, application 08/072,982, filed 3 June 1993, and application 07/927,801, filed 10 August 1992.

3. Green is involved on the basis of application 08/709,930, filed 9 September 1996.

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<sup>1</sup> Green miscellaneous motion 1 to declare an interference between Wang's patent 5,815,640 and Green's involved application was denied (Paper 41).

4. Green has been accorded benefit for the purpose of priority of application 07/823,932, filed 21 January 1992.

5. Wang real party in interest is Computer Motion, Inc. (Paper 10).

6. Green real party in interest is Intuitive Surgical, Inc. (Paper 7).

7. The interfering subject matter pertains to a method for allowing a user to remotely control movement of a surgical instrument.

8. Count 1, the sole count of the interference, is claim 1 of Wang.

9. Claim 1 of Wang is identical to Green claim 115 and is as follows:

A method for allowing a user to remotely control a movement of a surgical instrument having a tip, the method comprising the steps:

a) establishing an original position of the surgical instrument tip;

b) inputting a command provided by a user to move the surgical instrument in a desired direction relative to an object displayed on a display device;

c) computing an incremental movement of the surgical instrument based on the command provided by the user and on the original position of the surgical instrument;

d) moving the surgical instrument in the desired direction so that the surgical instrument tip always moves in a direction commanded by the user.

### C. Decision

Wang preliminary motion 1 - Green claim 115 is barred under 35 U.S.C. § 135(b)

Wang argues that Green's sole involved claim 115 is unpatentable under 35 U.S.C. § 135(b) based on Wang U.S. Patent 5,524,180 ('180), issued 4 June 1996. Green claim 115 was added to Green's application on 28 May 1999.

Wang bears the burden to demonstrate that it is entitled to the relief sought. 37 CFR § 1.637(a). To meet that burden, Wang relies on an alleged admission made by party Green in its miscellaneous motion 1.

Green's miscellaneous motion 1 sought to add to the interference, or alternatively to declare an additional interference between Green's involved application and Wang U.S. Patent 5,815,640 ('640). Some of the '640 claims are nearly identical to some of the '180 claims. For example, '640 claim 8 is nearly identical to '180 claim 15.

In its miscellaneous motion, Green compared '640 claim 8 with the count to demonstrate that the claims were to the same patentable invention. Wang argues that:

In view of Green's admission that claim 8 of the '640 patent claims the same or substantially the same patentable subject matter as the count, an interference between Green's involved '930 application and claim 1 of Wang's '193 patent is barred under 35 U.S.C. § 135(b). (Paper 37 at 8).

And:

Given Green's claim interpretation that Wang claim 8 claims the same or substantially the same subject matter as the count (Wang '193 claim 1) an interference between Green claim 115 and the count is barred under 35 U.S.C. 135(b) since the Green amendment coping [sic] Wang '193 claim 1 did not take place within one year of the issuance of Wang's '180 patent. *In Re McGrew*, 120 F.3d 1236 (Fed. Cir. 1997). (Paper 37 at 9).

Wang appears to argue that because Green allegedly admitted that '640 claim 8 (which is nearly identical to a claim in the '180 patent) is the same or substantially the same as the count (which is identical to Green claim 115), and since Green made its claim 115 a year after the issuance of '180, then Green's claim 115 is barred under 35 U.S.C. § 135(b) in view of '180. We are not persuaded by Wang's argument for the following reasons.

Wang is the movant, and thus the burden is upon it to demonstrate that the '180 patent renders Green claim 115 unpatentable under 35 U.S.C. § 135(b). Section § 135(b) is as follows:

A claim which is the same as, or for the same or substantially the same subject matter as, a claim of an issued patent may not be made in any application unless such a claim is made prior to one year from the date on which the patent was granted.

Wang should have compared a claim from the '180 patent with Green claim 115 and set forth facts and arguments supported by evidence as to why Green claim 115 is a claim that is the same as, or for substantially the same subject matter as a claim in '180. This, Wang did not do. Instead, Wang merely

relies on an alleged admission made by Green in another motion to prove its case.

Wang argues that Green admitted that '640 claim 8 "claims the same or substantially the same subject matter" as the count (which is identical to Green claim 115) in Green's miscellaneous motion 1. Wang fails to direct us to where in Green's miscellaneous motion Green admits that '640 claim 8 "claims the same or substantially the same subject matter" as the count. In its motion, Green argues that '640 claim 8 is "not independently patentable" over the count (Paper 22 at 12). That Green did so is consistent with the relief sought. Green had the burden to establish that an interference-in-fact existed between a claim of the '640 patent and a Green claim involved in the interference, and thus, that a claim of Wang and a claim of Green define the same patentable invention. The test for "same patentable invention" under 37 CFR § 1.601(n) and "same or substantially the same subject matter" under 35 U.S.C. § 135(b) are not the same. See In re Berger, \_\_\_ F.3d \_\_\_, 61 USPQ2d 1523, 1527 (Fed. Cir. 2002). Thus, to the extent that Green admitted anything, it admitted that '180 claim 8 and the count (Wang claim 115) define the same patentable invention.

Green's "admittance" was made in the context of its argument to get the relief it sought. That Green made the argument does

not mean that the argument was accepted or persuasive. Indeed, Green's argument was found not to be persuasive. Green's miscellaneous motion 1 was denied. Thus, even if Green made such an admission as alleged by Wang, such admission does not establish the conclusion desired by Wang.

As explained in Berger, the test for "same patentable invention" under 37 CFR § 1.601(n) and "the same or substantially the same subject matter" test under 35 U.S.C. § 135(b) are not the same. Here, Wang has failed to sufficiently demonstrate that Green claim 115 is the same or substantially the same as a claim in '180. Indeed, Wang has made no comparison at all.

Green claim 115 is directed to a method for allowing a user to remotely control movement of a surgical instrument. Claim 8 of '640 (claim 15 of '180) is directed to a system for controlling movement of a surgical instrument that does not require remote control over the surgical instrument. Claim 8 of '640 (claim 15 of '180) recites a mechanism that moves the surgical instrument. The surgical instrument is coupled to a display device. These features are not recited in Green claim 115.

Wang has not accounted for the differences between Green claim 115 and any one claim of Wang '180, and indeed has made no comparison at all. Therefore, Wang has not demonstrated that the claims are to "substantially the same subject matter."

For the reasons stated above, Wang preliminary motion 1 is denied.

Wang preliminary motion 2

Wang preliminary motion 2 is for judgment against Green on the basis that Green's sole involved claim 115 is unpatentable under 35 U.S.C. § 112, ¶ 1. Wang argues that the Green specification fails to provide written description support for the limitation to "move the surgical instrument in a desired direction relative to an object displayed on a display device" (Paper 39 at 13).

The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of filing of the claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language.

Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1563, 19 USPQ2d 1111, 1116 (Fed. Cir. 1991); In re Kaslow, 707 F.2d 1366, 1375, 217 USPQ 1089, 1096 (Fed. Cir. 1983).

Green claim 115 is identical to Wang claim 1. Wang argues that Green's claim 115 be interpreted in light of Wang's specification, such that the limitation "move the surgical instrument in a desired direction relative to an object displayed



on a display device" means movement of the tip of an endoscope, or similar video imaging device in a direction relative to the image displayed on the display device (Paper 39 at 18-19). Wang would have us interpret Green's claim 115 to mean (1) that the surgical instrument is an endoscope or video imaging device, (2) that the endoscope or video imaging device is coupled to a display and (3) that when the "surgical instrument", e.g. the endoscope moves, it does so relative to the image displayed on the screen.

Wang relies on In re Spina, 975 F.2d 854, 856, 24 USPQ2d 1142, 1144 (Fed. Cir. 1992) for the proposition that a copied claim is interpreted in light of the patent from which it was copied. Wang is incorrect. Rule 633(a) expressly provides that:

In deciding an issue raised in a motion filed under this paragraph (a), a claim will be construed in light of the specification of the application or patent in which it appears.

Rule 633(a) is a procedural rule and governs this interference. In Rowe v. Dror, 112 F.3d 473, 42 USPQ2d 1550 (Fed. Cir. 1997), the court distinguished Spina from Rule 633(a) and stated that:

[T]he PTO had good reason to promulgate a new rule in light of the new practice in which patentability of claims can be considered during the motion period of an interference. See 37 C.F.R. § 1.633(a) (effective date February 11, 1985). Earlier case law did not deal with such a situation. Moreover, Spina did not involve a Rule 633(a) motion. Thus, the PTO was writing on a clean slate, not flouting judicial precedent.

Rowe, 112 F.3d at 479 n.2, 42 USPQ2d at 1554 n.2. See also, Cultor Corp. v. A.E. Staley Manufacturing Co., 224 F.3d 1328, 1332, 56 USPQ2d 1208, 1211 (Fed. Cir. 2000) (Copied claims construed in light of specification of which they are a part). Thus, we decline to interpret Green's claim 115 in light of Wang's specification such as to add limitations to the claim language. Green's claim 115, to the extent necessary, is to be construed in light of Green's specification.

The limitation to "move the surgical instrument in a desired direction relative to an object displayed on a display device" appears simple to understand. The claim does not require adding limitations into the claim as Wang suggests. The limitation is interpreted such that when viewing on the display, the operator may verify that when he sends commands to move the surgical instrument in a desired direction that the instrument actually moves in that direction relative to an object displayed. Green's involved specification provides written description support for this interpretation.

Green's specification describes, with respect to the "surgical" embodiments shown in Figs. 7-9, that the elements of the imaging system "are substantially the same as those employed in the imaging system illustrated in Figs. 1-3 ... except that an enlarged virtual image ... is provided for viewing by the operator." (Green Ex. 1003 at 13, lines 5-10). Green's

specification describes, with respect to Figs. 1-3, that:

[t]he worksite is provided with [a] pair of video cameras 46R and 46L for viewing workspace 30 from different angles for production of stereoscopic signal outputs ... (Green Ex. 1003 at 6, lines 28-31).

The video camera outputs at lines 48R and 48L are supplied to an image memory 50 for momentary storage of video fields of right and left images from the cameras. Fields of right and left images from image memory 50 are alternately supplied through left/right switch means 52 to visual display means 54, such as a television monitor, for alternate display of the two images at the face 54A of the monitor. (Green Ex. 1003 at 7, lines 5-12).

[An] inverted workspace image 30I is viewed by the operator via a mirror 66 at the top of a table 68, which mirror inverts image 30I to return the image as viewed by the operator to an upright position. Looking downwardly in the direction of the mirror, the operator views a virtual image 30V of workspace 30. In accordance with one aspect of the present invention, the image viewed by the operator, which in the Fig. 1-3 embodiment comprises a virtual image, is located adjacent controller means 70 used by the operator for control of manipulator means 24 at the worksite. (Green Ex. 1003 at 8, lines 10-21).

With respect to Figs. 7-9, the specification further states that:

Video camera means at the worksite, such as shown in Fig. 9, together with display means, such as shown in Fig. 7, are employed for providing the operator with an image of the workspace at a location adjacent the left and right hand-operated control means. (Green Ex. 1003 at 18-19, lines 33-2).

A further embodiment with respect to Figs. 12 and 13 describes that:

End effector and object images 248 and 250, respectively, are shown within the workspace image as viewed by video cameras at the worksite. The display means 246 is located adjacent the left and right hand-operated means 244R and 244L for direct viewing by the operator. With this

arrangement, the end effector and object images together with the hand-operated means 244R and 244L are simultaneously viewable by the operator. Since the hand-operated means also are visible, the operator is provided with a visual sense of connection between the end effector means and hand-operated means whereby they appear substantially as being integral. (Green Ex. 1003, at 19-20 lines 25-2).

Green's specification describes a video display at the operator's station for viewing the surgical instrument at the work site. The operator inputs commands at the operator's station that acts to manipulate objects at the work site. The display provides a visual of the object that the operator is manipulating at the work site. When the operator moves its controls, e.g. the manipulator at the operator's station in a desired direction, the surgical instrument likewise moves in a desired direction. The operator may verify this action visually on the display device. When the operator inputs a command "to move the surgical instrument in a desired direction" the surgical instrument will move in the desired direction and relative to the object displayed on the display device. Thus, the display, can be fixed and meet the claimed limitation, since the instrument will always move in the desired direction relative to the object displayed on the display device.

Wang argues that even if Green's claim 115 is to be interpreted such that the term "surgical instrument" is not limited to an endoscope or other video imaging device, Green

still does not have written description support for its claim 115 (Paper 29 at 23).

Wang directs us to Green's laparoscope 108 shown in Fig. 9 which contains an outer end section 120 that can rotate within inner end 122. Wang argues that when the outer end section 120 is rotated, the image device within the laparoscope will also rotate, so that a rotation of 180 degrees will likewise rotate the image 180 degrees. When this happens, Wang argues, the image displayed on the display device is out of alignment and the surgical instruments will not move relative to the image displayed on the display device. Instead, when the laparoscope is rotated 180 degrees, the instrument will appear to move in the opposite desired direction displayed on the display device.

Wang's argument is not persuasive. Wang makes the assumption, without directing us to supporting evidence, that an operator of the Green system would want to rotate the laparoscope during the surgical procedure. Green's disclosure, with respect to Fig. 9 describes the following:

Laparoscope 108 for viewing the workspace 104 is shown comprising an outer operating section 108A and insertion section 108B. The outer end section 120 of insertion section 108B is axially and rotatably movable within the inner end 122 thereof, and is provided with a pair of image transmission windows 124, 124 for stereoscopic viewing of workspace 104. (Green 1003, page 14, lines 27-33).

Video camera means within section 108A are responsive to light received through the viewing windows for generation of left and right electronic images at output lines 48R and 48L for connection to image memory 50. A magnified 3-

dimensional image 104I is produced at display means 54 for viewing by the operator wearing cross-polarized glasses 60 via mirror 66. As with the embodiment shown in Figs. 1-3, a virtual image 104V of the workspace 104 is produced adjacent control arms 130R and 130L of controllers 102R and 102L. (Green Ex. 1003, page 15, lines 2-11).

Angular pivotal motion of the control arms 130R and 130L produces the same angular pivotal motion of insertion sections 100RB and 100LB, and rotational movement of the end sections 132R2 and 132L2 of the control arms produces the same rotational motion of end sections 112R2 and 112L2 of the insertion sections of the right and left manipulators ... (Green Ex. 1003, page 16, lines 6-12).

From the above, there is no discussion of rotating or manipulating the laparoscope 108. The description describes providing an image of the workspace as in Figs. 1-3. In Figs. 1-3, the cameras are fixed above the workspace and not manipulated or rotated during surgery. Still further, the above description describes moving the manipulators 100LB and 100RB located at the work site by moving the control arms 130R and 130L at the operator's station. This includes rotating the ends of the manipulators to manipulate the organ or tissue of the patient. Note, absent from the figures or description is a control arm at the operators station that is used for manipulating the laparoscope during surgery. There is no discussion of manipulating the laparoscope during the surgery, and one would not infer as much from the description. Green only describes and discloses manipulating arms 100RB and 100LB during the procedure - not arm 108B. Wang has failed to direct us to where in Green's

specification there is a suggestion or teaching that the laparoscope 108 is rotated or manipulated during surgery.

For the above reasons, Wang preliminary motion 2 is denied.

Green preliminary motion 2 - Wang claims 1-3 unpatentable in view of prior art

Green argues that Wang's claim 1 is anticipated by Green's U.S. Patent 5,808,665 ('665) (Paper 33 at 12). Each of Wang's claims 2 and 3 depends on Wang claim 1. Green argues that Wang claims 2 and 3 are obvious over '665 in view of U.S. patent 5,078,140 (Kwoh).

Wang claim 1 is as follows:

A method for allowing a user to remotely control a movement of a surgical instrument having a tip, the method comprising the steps:

- a) establishing an original position of the surgical instrument tip;
- b) inputting a command provided by a user to move the surgical instrument in a desired direction relative to an object displayed on a display device;
- c) computing an incremental movement of the surgical instrument based on the command provided by the user and on the original position of the surgical instrument;
- d) moving the surgical instrument in the desired direction so that the surgical instrument tip always moves in a direction commanded by the user.

Green argues that each and every element of Wang claim 1 is described in the '655 reference, either expressly or inherently. Green directs us to figures and passages in the '665 reference

that describe the claimed features. In addition, and in compliance with paragraph 26(d) of the Standing Order, Green includes an Appendix A of Wang claim 1 with citations to the '665 reference for the claimed elements.

Green acknowledges that its '665 disclosure does not explicitly describe "computing an incremental movement of the surgical instrument based on the command provided by the user and on the original position of the surgical instrument." Instead, Green takes the position that the feature is inherent.

A claim is anticipated only when a single prior art reference discloses each and every limitation of the claim. The disclosure need not be express, but may anticipate by inherency where it would be appreciated by one of ordinary skill in the art. Glaxo, Inc. v. Novopharm, Ltd., 52 F.3d 1043, 1047, 34 USPQ2d 1565, 1567 (Fed. Cir. 1995).

Green directs us to where in the '665 disclosure is described that the operator's movements of the control arms at the operator station controls the position of the manipulator arms and end effectors via a "servomechanism system." According to Green, the '665 further describes that servomechanisms are well known and that any suitable prior art servomechanism may be used.

Green argues, supported by the declaration of Dr. Salisbury, that servomechanisms used to control the position of a robotic



arm necessarily take into account the original position of the robotic arm. This is done by determining the position of the arm before movement through the use of position sensors such as optical or electromagnetic position encoders. Green points out, that the '665 patent describes that the control means and manipulators may be employed using a wide variety of well-known mechanisms, including optical or electromagnetic position encoders. (Green Ex. 1015, col. 11, lines 22-27).

Dr. Salisbury states that servomechanism systems are necessarily closed-loop control systems that use position sensors to determine the difference between the sensed (original) position of the arm and the commanded positions of a robotic arm to move the arm. Salisbury directs us to Katsuhiko Ogata, "Modern Control Engineering" (Green Ex. 1044) to support his assertions. In its declaration, Salisbury explains the passages in the Ogata reference as demonstrating how a servomechanism system would work for the robotic system shown in Green '665. Salisbury concludes that Ogata establishes that the '665 patent necessarily and inherently discloses a closed-loop servomechanism control system that relies on information from position sensors to sense the actual position of the robotic arm, and that moves the arm towards the commanded location based on the computed difference between the input command of the operator on the control handles and the arm's sensed position.

Green also directs us to the passages in the Wang patent that describe similar action with respect to the robotic arm. Specifically, Wang describes:

[That] [t]he actuators 24, 30, 34 and 38 may each have position sensors 46-52 that are connected to the computer 20. The sensors may be potentiometers that can sense the rotational movement of the electric motors and provide feedback signals to the computer 20 (Green Ex. 1002, col. 4, lines 34-38).

And that the sensors are relied on to determine the movement of the arm to the desired position as follows:

To move the end effector to a new location of the x-y plane[,] the processor 78 computes the change in angles a2, a3 and a4, and then provides output signals to move the actuators accordingly. The original angular position of the end effector is provided to the processor 78 by the sensors 46-55. The processor moves the linkage arms an angle that corresponds to the difference between the new location and the original location of the end effector (Green Ex. 1002, col. 5, line 65 - col. 6, line 5).

Thus, as explained from the above, the position sensors located at the different locations, e.g. joints along the robotic arm are used to determine the difference between the new location and the original position to move the arm, and thus instrument, to the desired location. This is similar to the explanation provided by Salisbury with respect to how "servomechanism systems" work.

Wang, in its opposition does not dispute that servomechanisms are closed-loop systems that rely on position encoders to determine the position of the robotic arm, rather Wang argues that not all servomechanisms using position encoders

necessarily move a robotic arm based on the original position of the arm, but based on the relevant position of the robotic arm.

Wang's position is supported by the declarations of Drs. Wang and Hackwood. Neither Wang nor Hackwood dispute the declaration of Dr. Salisbury and the teaching of Ogata, demonstrating that a "servomechanism system" using "position encoders" (described in the '665 patent) is a closed-loop feedback system that allows for error correction - the error determined by the difference between an original position and the desired position.

Hackwood and Wang appear to take the position that servomechanism systems can use different types of position sensors - absolute joint position sensors needed to determine absolute joint-angle information and relative position sensors that determine the relative position between the master and slave joint(s). Hackwood and Wang state that Wang '193 discloses how to accurately determine the original position of the surgical instrument by using absolute joint-angle information with reference to a world coordinate frame.

Hackwood and Wang suggest that Green's '665 system is based on one in which the kinematic structure of the master controller is identical to the kinematic structure of the slave manipulator. According to them, in such a system, it is not necessary to know the absolute position of each joint. Rather the system can utilize the relative position between each master controller

joint and the corresponding slave manipulator joint. In such a system each slave joint is positioned relative to the corresponding master controller joint (Wang Ex. 2023, ¶¶ 6-8, Wang Ex. 2032, ¶¶ 11-13).

There are difficulties with the declarations of Wang and Hackwood. Neither explain what "absolute joint-angle" information means. Wang's '193 specification does not describe determining the "absolute joint-angle" information with reference to a "world coordinate system" to determine the original position of the instrument. Rather, Wang describes position sensors at the various joints along the robotic arm. The sensors relay information back to the computer that then determines the angles between each link to determine the original position of the arm, and thus the surgical instrument. This is similar to the concept of a servomechanism system as described by Salisbury, and as further explained in the Ogata reference.

Note, that Wang's involved patent does not describe sensors located at the tip of the instrument or anywhere on the instrument itself. Rather the position of the instrument apparently is determined by sensing the position of the robotic arm. Wang and Hackwood conclude that in order to determine the "absolute joint-angle" information in reference to a "world-coordinate system" that one must use "absolute joint position sensors." The term "absolute joint position sensors" is not explained. Wang's own disclosure does not refer to the position

sensors as "absolute joint position sensors." We do not know what the term means.

Wang and Hackwood suggest that Green '665 describes a servomechanism system that uses "relative position encoders" that determine the relative position between the master and slave joints and not the original position. This is so, they suggest, since the master and slave kinematic structures shown in '665 are identical. It is enough then, they suggest, to just know the relative position between the master and slave joints to move the slave arm to a desired position. Neither explain what calculations, or determinations are made when one determines a "relative position." Even if the desired movement is accomplished by taking the difference between the desired location and the relative position, there is some starting point, e.g. the relative position. In other words, the computer has to tell the slave to move to the desired location by knowing some "original position", even if such position is relative to the master. Neither Wang nor Hackwood explain how the servomechanism system determines to move the slave arm when the "relative position" is established.

Still further, Hackwood and Wang make the assumption that '665 would only support a servomechanism system that uses relative position encoders, because the kinematic structure of the master and the kinematic structure of the slave are the same. However, there is at least one embodiment that shows a kinematic

structure of the slave that is apparently different from the kinematic structure of the master. Green '665 Fig. 14 show two "steerable catheters" 268L and 269R. The embodiment is described as follows:

Steerable catheters which include control wires for controlling bending of the catheters and operation of an end effector suitable for use with this invention are well known. Control motors for operation of the control wires are provided at the operating end of the endoscope, which motors are included in a servomechanism of a type described above for operation of the steerable catheters and associated end effectors from a remote operator's station. As with the other embodiments, the interfacing computer in the servomechanism system remaps the operator's hand motion into the coordinate system of the end effectors... (Green Ex. 1015, col. 10, lines 54-64).

Wang is silent with respect to this embodiment. Here, it appears that the operator's controls are different from the manipulators, such that, according to the definitions provided by Wang and Hackwood, relative sensors would not work with such a system, rather one would use "absolute joint" encoders as such encoders are explained by Wang and Hackwood.

Wang argues that the Green '665 patent does not describe (1) the location of every motor used in the servomechanism system; (2) the location of the position encoders; or (3) which motors utilize position encoders. Wang concludes that without such description '665 does not disclose a servo system capable of determining the original position of the surgical instrument's tip. Wang's claim 1 does not recite specific locations of the encoders or motors. Further, Wang does not rebut Green's

assertions, through the declaration of Salisbury, that a servomechanism system using position encoders, as described in '665, necessarily uses encoders associated with motors or joints along the robotic arm to sense the original position (Green Ex. 1043, ¶ 7).

Wang also argues that the examiner's rejection of Green claim 115 (which is identical to Wang claim 1), during ex parte prosecution, as lacking support for computing incremental movement of the surgical instrument based on the original position of the surgical instrument was correct. Apparently, Wang is arguing that since the disclosure of the '665 patent is identical to the disclosure of Green's involved application, then the '665 patent does not describe Wang claim 1 for the same reasons given by the examiner.

The examiner's rejection was overcome. The examiner indicated that Wang claim 115 was allowed (Green Ex. 1009 at 8). Furthermore, we are not bound by decisions made by an examiner during ex parte prosecution. During an interference, independent review of issues are made. See Glaxo Wellcome, Inc. v. Cabilly, 56 USPQ2d 1983, 1984 (BPAI (ITS)). (Neither the Board nor a party are bound by an ex parte decision made during prosecution by another party. A motion in an interference is not an appeal from the examiner's decision, but an independent request to the Board).

The next claimed feature that the parties disagree is described in Green '665 is to "move the surgical instrument in a desired direction relative to an object displayed on a display device." Wang argues that the claimed surgical instrument should be interpreted to mean an "endoscopic instrument." By urging such a claim construction, Wang is reading limitations into its claim 1.

Wang has provided no reason why the term surgical instrument should be construed so narrowly. The term "surgical instrument" is not vague, or ambiguous. We decline to read "endoscopic" into Wang claim 1.

Wang's remaining arguments are essentially the same as those made in its preliminary motion 2. That is, Green's '665 disclosure is essentially the same as Green's involved application. In its preliminary motion 2, Wang argues that Green does not have written description support in its claim 115 for the limitation to "move the surgical instrument in a desired direction relative to an object displayed on a display device." For the same reasons given above in connection with Wang's preliminary motion 2, we are not persuaded by Wang's arguments in its opposition 2.

For the reasons stated above, Wang claim 1 is unpatentable under 35 U.S.C. § 102(e) as being anticipated by Green '665.

Wang claims 2 and 3

Green argues that Wang's claims 2 and 3 are unpatentable



under 35 U.S.C. § 103 as being obvious over '665 in view of U.S. Patent 5,078,140 (Kwoh) (Paper 33 at 17). Wang claim 2 depends on claim 1 and recites "wherein the step of inputting a command comprises a save command." Wang claim 3 depends on Wang claim 1 and recites "wherein the step of inputting a command comprises a return command."

Green argues that Kwoh '140 describes controlling movement of a robotic arm so that the arm can be summoned back by the surgeon to occupy a position it previously occupied. Green directs us to the following passage in Kwoh:

By pushing two buttons on the manual controller, or by typing commands into a keyboard that interacts with the computer software, the surgeon may control the robotic arm 1 so that the probe holder 21 moves in or out along the trajectory, as shown in Fig. 5, as close to the head as desired. The surgeon can use the buttons on the manual control unit of the robotic arm 1 to alter the trajectory. (Green Ex. 1035, col. 7, lines 11-18).

And:

After the burr hole is drilled, the robotic arm 1 can be programmed by means of the stereotactic computer software to quickly retract to its standby position or, if desired, the robotic arm 1 can be left in place. As soon as the surgeon finishes cleaning and sterilizing the burr hole, the robotic arm 1 can be summoned back to the trajectory that it left. (Green Ex. 1035, col. 7, lines 35-41).

Green argues that in order for the robotic arm to be summoned back to a position it previously occupied, two things must occur. First, the computer must be able to remember the location of the previous position to which the arm is "summoned back." Thus, the computer controller saves the information in

memory. Second the operator must be able to command the arm to move to the previous position - or to use a return command (Paper 33 at 18). Green's assertions are supported by the declaration of Dr. Salisbury (Green Ex. 1043 ¶¶ 17-18).

Green argues that the motivation to combine the teachings of the references comes from the nature of the art itself, in that both '665 and Kwoh pertain to controlling movement of the robotic arm in response to a surgeon's input instructions (Paper 33 at 19).

In response, Wang argues that '665 does not teach the limitations of the base claim 1, and thus there is no primary reference with which to combine Kwoh. For the reasons stated above, Wang's arguments rebutting Green's prima facie case of anticipation were not deemed persuasive. Wang further argues that merely providing for summoning back of the device does not disclose the limitations of an input command saving a position or a second input command returning the surgical instrument to a saved position (Paper 54 at 24).

Wang's arguments are unsupported by evidence, and are based on attorney argument alone. Wang fails to direct us to evidence in the form of a publication or declaration that would sufficiently rebut Green's prima facie case. Kwoh describes that the operator can summon back the arm to a prior position. Wang has failed to sufficiently explain why Kwoh does not "summon

back" by saving the original position and then returning to the original position.

Accordingly, Wang's claims 2 and 3 are unpatentable under 35 U.S.C. § 103 over '665 in view of Kwoh.

For the reasons stated above, Green preliminary motion 2 is granted.

**D. ORDER TO SHOW CAUSE**

Wang's preliminary statement does not allege a date that is earlier than Green's January 21, 1992 effective filing date. Wang's earliest alleged date, a date of conception, is February 27, 1992. Thus, it is appropriate to enter judgment against the junior party Wang. See 37 CFR § 1.640(d)(3).

Accordingly, it is

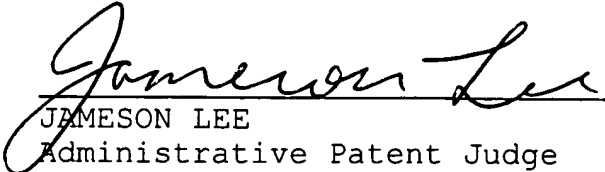
ORDERED that judgment as to Count 1 (Paper 1 at 5), the sole count in the interference, is awarded against junior party YULUN WANG, KEITH P. LABY, DARRIN R. UECKER, AMANTE A. MANGASER, and MODJTABA GHODOUSSI;


FURTHER ORDERED that junior party YULUN WANG, KEITH P. LABY, DARRIN R. UECKER, AMANTE A. MANGASER, and MODJTABA GHODOUSSI is not entitled to a patent containing claims 1-3 (corresponding to Count 1) of U.S. Patent 5,878,193;

FURTHER ORDERED that a copy of this paper shall be made of record in the files of application 08/709,930, and U.S. Patent 5,878,193;

FURTHER ORDERED that if there is a settlement agreement,  
attention is directed to 35 U.S.C. § 135(c) and 37 CFR § 1.661.

  
RICHARD E. SCHAFER )  
Administrative Patent Judge )

  
JAMESON LEE ) BOARD OF PATENT  
Administrative Patent Judge ) APPEALS AND  
INTERFERENCES )

  
SALLY G. MEDLEY )  
Administrative Patent Judge )

cc (via federal express):

Attorney for Wang:

Jan P. Weir  
Stradling, Yocca, Carlson & Rauth  
660 Newport Center Drive, Suite 1600  
Newport Beach, CA 92660

Tel: 949-725-4000  
Fax: 949-725-4100

Attorney for Green:

Edward J. Keeling  
Townsend and Townsend and Crew LLP  
Two Embarcadero Center, 8<sup>th</sup> Floor  
San Francisco, CA 94111-3834

Tel: 415-576-0200  
Fax: 415-576-0300